Patent Claims

1. A method for the thermal purification of an oxygen-containing or non-oxygen-containing exhaust gas which contains organosilicon compounds, the exhaust gas being preheated in a regenerative manner by means of heat storage material, at least a part of the heat storage material being a bed, characterized in that it comprises:
removal, purification and introduction of the heat storage material bed for removal of the adhesions formed by the oxidation of the organosilicon compounds.

2. The method as claimed in claim 1, characterized in that the removal, purification and introduction of the heat storage material bed is effected automatically or semiautomatically.

3. The method as claimed in either of the preceding claims, characterized in that the regenerative preheating and cooling, and the oxidation of the exhaust gas, are effected within a regenerator bed which is operated alternately with upward and downward flow.

4. The method as claimed in claim 3, characterized in that a flushing cycle with intermediate storage of the exhaust gas is furthermore effected.

5. The method as claimed in claim 1 or 2, characterized in that two or more regenerator beds which are connected to a combustion space and through which flow takes place alternately are used and in each case are equipped with an apparatus for removal and introduction of the heat storage material, which are connected to a separation apparatus.

6. The method as claimed in any of the preceding claims, characterized in that the automated removal, purification and introduction of the heat storage material using an apparatus is effected at successive times in the individual regenerators.

7. The method as claimed in any of the preceding claims, characterized in that the heat storage material is purified after a maximum permissible pressure drop of the plant is exceeded.

8. The method as claimed in any of the preceding claims, characterized in that the heat storage material is purified after certain time intervals.

9. The method as claimed in any of the preceding claims, characterized in that the regenerators consist not completely but only partly of a removable bed.

10. The method as claimed in any of the preceding claims, characterized in that the bed material is removed not completely but only partly.

11. The method as claimed in any of the preceding claims, characterized in that the preheating is brought about not completely in a regenerative manner but partly by another route.

12. The method as claimed in any of the preceding claims, characterized in that additionally required energy is introduced with the aid of admixing of natural gas into the exhaust gas, electrically, via a burner or by gas injection.

13. An apparatus for the thermal purification of an oxygen-containing or non-oxygen-containing exhaust

gas which contains organosilicon compounds, the exhaust gas being regeneratively preheated by means of a heat storage material, at least a part of the heat storage material being a bed, characterized in that a discharge for the heat storage material bed is present on the regenerator, this discharge is connected to a separation apparatus for separating off oxidized silicon adhesions; the separation apparatus is connected to a feed which enables the bed to be recycled to the regenerator.

14. The apparatus as claimed in claim 13, characterized in that a transport device is arranged between the separation apparatus and the feed.

15. The apparatus as claimed in any of the preceding claims, characterized in that the bed material consists of solid or hollow spheres.

16. The apparatus as claimed in any of the preceding claims, characterized in that it contains two or more regenerators which in each case have a discharge, and this discharge being connected to a separation apparatus.

17. The use of the apparatus as claimed in any of claims 13 to 16 for the treatment of exhaust gas, this exhaust gas containing organosilicon compounds.